

invention. No new matter has been added by the amendments above. Favorable reconsideration is respectfully requested in light of the above amendments and the following comments.

The Examiner has objected to the specification because it does not include an abstract. The above amendments to the specification add an abstract. The abstract has also been included on a separate sheet attached hereto. Applicants assert that the abstract does not add new matter. Applicants respectfully request withdrawal of this objection.

The Examiner rejected claims 1-23, 32-35, 42-64, and 69-70 under 35 U.S.C. § 112, second paragraph. Applicants respectfully traverse this rejection.

The Examiner rejected claims 1-23, and 28-31 under 35 U.S.C. § 102(a) as being anticipated by Benveniste et al. (FASEB J., March 17, vol. 12(4); pp A412, 1998). Applicants respectfully traverse this rejection.

The Examiner rejected claims 1-23, 28-35, and 42-64 under 35 U.S.C. § 102(b) as being anticipated by Benveniste et al. (J. Allergy Clin Immunol., vol. 99(1), part 2, pp S175, 1997). Applicants respectfully traverse this rejection.

The Examiner rejected claims 1-23 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,653,939 (Hollis et al.). Applicants respectfully traverse this rejection.

The Examiner rejected claims 1-23 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,242,246 (Gold et al.). Applicants respectfully traverse this rejection.

Rejection under 35 U.S.C. § 112

The Examiner rejected claims 1-23, 32-35, 42-64, and 69-70 under 35 U.S.C. § 112, second paragraph.

Specifically, the Examiner rejected claim 1-23, 32-35, 42-64, and 69-70 under 35 U.S.C. § 112, second paragraph as being indefinite because the claims use the phrase "and/or". All instances of the phrase "and/or" have been removed from the claims.

Specifically, the Examiner rejected claim 28 under 35 U.S.C. § 112, second paragraph as being indefinite because the Examiner asserts that claim 28 depends on claim 24 which has been cancelled. Applicants respectfully believe that claim 28 was amended by the preliminary amendment of February 6, 2001 to make it dependent on claim 20, which has not been cancelled.

Specifically, the Examiner rejected claims 1-23 and 32-35 under 35 U.S.C. § 112, second paragraph as being indefinite because the claims recite a "reaction" which is confusing and

unclear as to what the term reaction refers to. Applicants respectfully disagree with the Examiner regarding this point. In the specification, Applicants further define "ligand-receptor pair" as "any pair that is formed by two substances capable of recognizing each other specifically, or binding and of **reacting together forming complexes**". (emphasis added) (page 4, line 32 -page 5, line 2). The result of the reaction, the formation of a complex" defines the term reaction, whether it is chemical, physical, or biochemical is not relevant. The Examiner also objected to claim 32 as reciting the phrase "process including the stages" because methods includes steps. Claim 32 and those claims dependent thereon have been amended to render the claim more clear.

Specifically, the Examiner rejected claims 1-23 under 35 U.S.C. § 112, second paragraph as indefinite because the claims lacked a last step or phrase that states the accomplishment of the goals of the method which were stated in the methods preamble. Claim 1 has been amended and Applicants' respectfully submit that the amendments have added such a phrase.

Specifically, the Examiner rejected claims 1-23 under 35 U.S.C. § 112, second paragraph as indefinite because the claims recite "amplifying" or "amplification process", which the Examiner asserts is confusing and unclear. Applicants respectfully assert that such phrase is not unclear, and the amendments to claim 1 have rendered it more clear. Specifically, the amendment to claim 1 adding the phrase " wherein said process amplifies the reaction at least in part by increasing the binding affinity properties of at least one of said two elements" renders the meaning of amplify more clear. Furthermore, the term "amplify" or "amplification" refers to the reaction itself, which as discussed above, refers to the formation of a complex, therefore, to amplify that would suggest to one of skill in the art that that complex is for example, formed at a greater rate, or more complex is formed. Based on the above comments, and the amendments to the claims, the Applicants respectfully submit that the terms "amplify" or "amplification" are not unclear or confusing.

Specifically, the Examiner rejected claims 32-35 under 35 U.S.C. § 112, second paragraph as being indefinite because claim 32 recites subject matter in parentheses. The text that was in the parentheses have been converted into a "wherein" clause to make it more clear that they are part of the claim. A similar amendment has been made to claim 35 which also included a parenthetical phrase.

Specifically, the Examiner rejected claims 1-23 under 35 U.S.C. § 112, second paragraph as being indefinite because they recite the phrase "electromagnetic signal characteristic of the biological activity". The Examiner asserts that the phrase is confusing and unclear. Applicants assert that the description in the specification of this phrase renders the phrase clear. Specifically, the description of the phrase can be found at page 5, lines 11 to 30. Applicants respectfully assert that the definition included in the specification, even if the Examiner thinks it is broad, is clearly defined in the specification and is therefore not unclear.

Specifically, the Examiner rejected claims 32-35, 42-64, and 69-72 under 35 U.S.C. § 112, second paragraph as being indefinite because the term "particularly" is used in the phrases. Applicants have deleted all phrases including "particularly" from the claims.

Specifically, the Examiner rejected claims 32-35, 42-64, and 69-72 under 35 U.S.C. § 112, second paragraph as being indefinite because the claims recite "parasitic fields", "possibly", and "previously exposed to", which the Examiner asserts are unclear. The claims have been amended to remove the instances of "parasitic", "possibly" and "previously exposed to".

Although other portions of the claims were not rejected, other amendments to the claims have also been made which the Applicants feel may make them more clear. Based on the above comments, and the amendments to the claims, Applicants respectfully request withdrawal of this rejection.

35 U.S.C. § 102 Rejections

The Examiner rejected claims 1-23, and 28-31 under 35 U.S.C. § 102(a) as being anticipated by Benveniste et al. (FASEB J., March 17, vol. 12(4); pp A412, 1998) ("Benveniste I"). The Examiner asserts that this reference discloses a method to detect electromagnetic signals of biological systems including bringing into contact a ligand (agonist) with a receptor (target cell), applying an electromagnetic signal and detecting the emission of specific hertzian waves emitted by the pair of molecules.

Applicants respectfully disagree with the Examiner's construction of Benveniste I. Applicants assert that the disclosure teaches how to apply an electromagnetic signal to a receptor. Benveniste I refers to "EM ligands", which is not equivalent to the Applicants' ligands. The "EM ligands" of Benveniste I are electromagnetic signals. Therefore, Benveniste I teaches replacing the function of an actual ligand with an electromagnetic signal, not amplifying the

reaction of an actual ligand and a receptor through the use of an electromagnetic signal. Because Benveniste I does not disclose all of the elements of Applicants' invention, it does not anticipate the Applicants' invention. Withdrawal of this rejection is therefore respectfully requested.

The Examiner rejected claims 1-23, 28-35, and 42-64 under 35 U.S.C. § 102(b) as being anticipated by Benveniste et al. (J. Allergy Clin Immunol., vol. 99(1), part 2, pp S175, 1997) ("Benveniste II"). The Examiner asserts that the reference discloses a method of amplifying electromagnetic signals of biological molecules that includes bringing the ligand (agonist) into contact with the receptor (target cell), applying an electromagnetic signal in a solvent to detect molecular activity.

Applicants respectfully disagree with the Examiner's construction of Benveniste II. Applicants assert that the disclosure of Benveniste II teaches how to record an electromagnetic signal from a ligand, transfer that electromagnetic signal over telephone lines, and then transfer the activity of the ligand via the transferred electromagnetic signal to a different molecule. Therefore, Benveniste II teaches the recordation of an electromagnetic signal from a ligand and the transfer of that signal to an entirely different molecule. Because Benveniste II does not disclose all of the elements of Applicants' invention, it does not anticipate the Applicants' invention. Withdrawal of this rejection is therefore respectfully requested.

The Examiner rejected claims 1-23 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,653,939 (Hollis et al.). The Examiner asserts that Hollis teaches a method for identifying molecular structures including contacting a probe with a target site which facilitates the binding of the probe to the target to form a binding complex, applying an electrical or optical signal, and detecting signals associated with the molecular structures.

Applicants respectfully disagree with the Examiner's construction of this reference. Hollis teaches a method of applying an electrical signal to a complex (DNA probes generally) after the reaction of the ligand and receptor that formed the complex. The signal is applied in order to detect the presence of the complex. Because the signal is applied after the complex has been formed, the signal could not be amplifying the formation of the complex, as it does in Applicant's invention. Because Hollis does not disclose all of the elements of Applicants' invention, it does not anticipate the Applicants' invention. Withdrawal of this rejection is therefore respectfully requested.

The Examiner rejected claims 1-23 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,242,246 (Gold et al.). The Examiner asserts that Gold teaches a method of detecting a target molecule binding to a nucleic acid ligand using fluorescence methods that include contacting the protein target molecules with labeled nucleic acid ligands on the surface of a biochip and detecting the signal generated by said target-ligand binding through a signal amplifying hybridization cascade.

Applicants respectfully disagree with the Examiner's construction of Gold. Gold teaches a method for detecting a target molecule binding to a ligand molecule that includes a mechanism for hybridization which seems to affect an amplification. However, the amplification referred to in the method of Gold regards the signal that is transmitted by the complex, not the formation of the complex itself. The amplification of an electromagnetic signal, as is disclosed by Gold, is entirely different than the amplification of a reaction as is claimed by the Applicants'. Because Gold does not disclose all of the elements of Applicants' invention, it does not anticipate Applicants' invention. Withdrawal of this rejection is therefore respectfully requested.

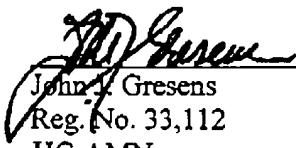
Conclusion

In view of the amendments and comments presented herein, favorable reconsideration in the form of a Notice of Allowance is respectfully requested.

Respectfully submitted,

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Marked up version of Claims

1. (Amended) A process for amplifying a reaction between [the two elements] a ligand and a receptor of a ligand-receptor pair[, characterised in that it includes] comprising:
[- the] bringing [into contact of the two elements] said ligand and said receptor of [the] said ligand-receptor pair into contact in conditions suitable to allow their reaction[.]; and
[- prior to, simultaneous with or subsequent to this bringing into contact, the application to one and/or the other of these elements of the electromagnetic signal characteristic of the biological activity of one and/or the other of said elements] applying at least one electromagnetic signal characteristic of the biological activity of at least one of said ligand or said receptor to at least one of said ligand or receptor, wherein said electromagnetic signal can be applied prior to, simultaneous with, or subsequent to said ligand and said receptor being brought into contact, wherein said process amplifies the reaction at least in part by increasing the binding affinity properties of at least one of said two elements.

2. (Amended) [An] The amplification process according to claim 1, [characterised in that] wherein the reaction between [the] said ligand and [the] said receptor is achieved by bringing [into contact] two reagents, containing respectively, [the] said ligand and [the] said receptor, into contact, and applying said at least one electromagnetic signal to [one and/ or the other of these] at least one of said reagents [is applied an electromagnetic test signal suspected to include the electromagnetic signal characteristic of the biological activity of this ligand and/or this receptor].

3. (Amended) [An] The amplification process according to claim 2, [characterised in that] wherein applying said at least one electromagnetic signal to said at least one [the application, to one and/or the other of the] reagent[s, of the electromagnetic test signal] is achieved by exposing a solution or a suspension comprising [containing one or the other of these] said at least one reagent[s] to [this] said at least one electromagnetic signal.

4. (Amended) [An] The amplification process according to claim 2, [characterised in that] wherein said [the] application of said at least one electromagnetic signal,

to [one and/or the other of the] said at least one reagent[s, of the electromagnetic test signal] is achieved by diluting a solution or a suspension [including one and/or the other of these] comprising said at least one reagent[s,] in a solvent [having been previously] already exposed to [this] said at least one electromagnetic signal.

5. (Amended) [An] The amplification process according to claim 2, [characterised in that the] wherein said application of said at least one electromagnetic signal, to [one and/or the other of the] said at least one reagent[s, of the electromagnetic test signal] is achieved by dissolving or putting into suspension [this or these] said at least one reagent[s] in a solvent [have been previously] already exposed to [this] said at least one electromagnetic signal.

6. (Twice Amended) [An] The amplification process according to claim 4, [characterised in that the] wherein said solvent [having been previously] already exposed to [the] said at least one electromagnetic signal [characteristic of the biological activity of the analytical sample is] comprises water, [or] physiological solute, or combinations thereof.

7. (Twice Amended) [An] The amplification process according to claim 2, [characterised in that the] wherein said at least one electromagnetic [test] signal [is] comprises the electromagnetic signal picked up from an analytical sample suspected to contain [the] said at least one ligand [and/]or [the] receptor.

8. (Twice Amended) [An] The amplification process according to claim 2, [characterised in that the] wherein said at least one electromagnetic [test] signal [is] comprises the electromagnetic signal radiated by an electromagnetic radiation source.

9. (Amended) [An] The amplification process according to claim 1, [characterised in that the] wherein said reaction between [the] said ligand and [the] said receptor is achieved by bringing an analytical sample suspected to contain said at least one ligand or receptor into contact [an analytical sample suspected to contain the ligand and/or the receptor,] with a reagent containing either [the] said receptor[, or [the] said ligand, and applying said at least one electromagnetic signal to [this] said sample and[/or to this] said reagent [is applied the

electromagnetic signal characteristic of the biological activity of said ligand and/or of said receptor].

10. (Amended) [An] The amplification process according to claim 9, [characterised in that the] wherein said application of said at least one electromagnetic signal[,] to [the] said analytical sample[, of the electromagnetic signal characteristic of the biological activity of the ligand and/or the receptor] is achieved by exposing [this] said sample to [this or these] said at least one electromagnetic signal[s,] or by diluting [this] said sample in a solvent [having been previously] already exposed to said at least one electromagnetic signal[(s)].

11. (Twice Amended) [An] The amplification process according to claim 9, [characterised in that the] wherein said application of said at least one electromagnetic signal[,] to [the] said reagent [intended to react with the] said analytical sample[, of the electromagnetic signal characteristic of the biological activity of the ligand and/or of the receptor] is achieved by exposing a solution or a suspension containing [this] said reagent to [this or these] said at least one electromagnetic signal[s, [or] by diluting [such] a solution or suspension in a solvent [having been previously] already exposed to [his or these] said at least one electromagnetic signal[s, or [again] by dissolving or putting into suspension [this] said reagent in a solvent [having been previously] already exposed to said at least one electromagnetic signal[(s)].

12. (Amended) [An] The amplification process according to claim 9, [characterised in that, to the] wherein said at least one electromagnetic signal is applied to said analytical sample and [to the] said reagent [intended to react with it, is applied the electromagnetic signal characteristic of the biological activity of the ligand and/or the receptor,] by exposing a solution or a suspension containing [this] said sample and [this] said reagent to [this or these] said at least one electromagnetic signal[s,] or by diluting [such a] said solution or suspension in a solvent [having been previously] already exposed to said at least one electromagnetic signal[(s)].

13. (Twice Amended) [An] The amplification process according to claim 9, [characterised in that,] wherein said at least one electromagnetic signal is applied to [the] said

analytical sample, and[/or to the] said reagent [intended to react with it, is applied] at [one and] the same time [the electromagnetic signal characteristic of the biological activity of the ligand and the electromagnetic signal characteristic of the biological activity of the receptor].

14. (Twice Amended) [An] The amplification process according to claim 10, [characterised in that the] wherein said solvent having been previously exposed to [the] said at least one electromagnetic signal[(s) is to advantage] comprises water, [or] physiological solute, or a combination thereof.

15. (Twice Amended) [An] The amplification process according to claim 1, [characterised in that it includes] further comprising [an acquisition stage of the] acquiring said at least one electromagnetic signal [characteristic of the biological activity of one and/or the other of the elements of the ligand-receptor pair].

16. (Amended) [An] The amplification process according to [any one of] claim[s] 15, [characterised in that it includes] wherein said step of acquiring comprises [a stage for] recording and retrieving data, wherein said data represents[ing][the] said at least one electromagnetic signal [characteristic of the biological activity of one and/or the other of the elements of the ligand-receptor pair].

17. (Twice Amended) [An] The amplification process according to claim 1, [characterised in that it includes] further comprising [a stage for] detecting [and], [possibly, for] measuring, or a combination thereof the complexes resulting from the reaction between [the] said ligand and [the] said receptor.

18. (Twice Amended) [An] The amplification process according to claim 9, [characterised in that the] wherein said ligand is an antigen or a hapten [, whereas the] and said receptor is an antibody or a membranous receptor directed specifically against [this] said ligand.

19. (Amended) [An] The amplification process according to claim 18, [characterised in that the] wherein said reaction between [the] said ligand and said receptor [antigen and the antibody or the hapten and the antibody] is revealed by agglutination.

20. (Twice Amended) A process for detecting the presence of a substance corresponding to [one of the two elements of a ligand-receptor pair] said ligand or said receptor in an analytical sample, [characterised in that it includes the implementation of an amplification] comprising a process according to claim 1.

21. (Amended) A detection process according to claim 20[, characterised in that it includes:] comprising:

[- the]bringing [into contact of] at least two reagents, containing respectively, [the] said ligand and [the] said receptor into contact, in conditions suitable to allow their reaction[.];

[- prior to, simultaneous with or subsequent to this bringing into contact, the application, to one and/or the other of these reagents, of the] applying at least one electromagnetic signal characteristic of the biological activity of the analytical sample to at least one of said ligand or receptor, wherein said at least one electromagnetic signal can be applied prior to, simultaneous with, or subsequent to said ligand and said receptor being brought into contact;[,] and

[- the detection and/or the measurement of the] detecting, measuring, or a combination thereof at least one ligand-receptor complex[es] formed during the reaction between [the two reagents] said ligand and said receptor.

22. (Amended) A detection process according to claim 21, [characterised in that] wherein the concentrations of [the] said ligand and [the] said receptor are chosen so as to be sufficient to [lead to the] obtain[ing of] ligand-receptor complexes detectable in the absence of the application of [the] said at least one electromagnetic signal [characteristic of the biological activity of said sample], but lower than the concentrations likely to lead to a saturation of the reaction between [this] said ligand and [this] said receptor.

23. (Amended) A detection process according to claim 20, [characterised in that it includes] comprising:

[- the] bringing [into contact of the] said analytical sample into contact with a reagent [containing] comprising either the receptor, if the substance sought in the sample is the ligand, or the ligand, if the substance sought in the sample is the receptor, in conditions suitable to allow their reaction[.];

[- prior to, simultaneous with or subsequent to this bringing into contact, the application,] applying said at least one electromagnetic signal to [this] said sample [and/or this], said reagent, or both said sample and said reagent [of the electromagnetic signal characteristic of the biological activity of the ligand and/or the receptor,]; and

[- the detection and/or measurement of] detecting, measuring, or a combination thereof any ligand-receptor complexes that may have been formed.

28. (Twice Amended) The process of claim 20, wherein said process is used in [Application of a process for detecting the presence of a substance in analytical sample according to claim 20 to] biological diagnostics in human or veterinary medicine.

29. (Twice Amended) The process of claim 20, wherein said process is used for [Application of a process for detecting the presence of a substance in an analytical sample according to claim 20 to] bacteriological control in the pharmaceutical industry, the cosmetic industry, or the food production [and] industr[ies]y.

30. (Twice Amended) A process for detecting the presence of an electromagnetic test signal characteristic of the biological activity of a substance corresponding to a ligand or a receptor of a ligand-receptor pair, in an electromagnetic test signal, [of an electromagnetic signal characteristic of the biological activity of a substance corresponding to one of the two elements of a ligand-receptor pair, characterised in that it includes] comprising the implementation of an amplification process according to claim 1.

31. (Amended) A detection process according to claim 30, [characterised in that the] wherein said electromagnetic signal is the electromagnetic signal radiated by an electromagnetic radiation source.

32. (Amended) A process for producing or acquiring, from a substance, [(1)] signals[, particularly electrical signals,] that are characteristic of the biological [and/]or chemical activity or [of] the biological [and/]or chemical behavio[u]r of said substance or [of] an active element contained in said substance[; said process including the stages] comprising:

[- of] placing said substance in a zone [(13)] subjected to an excitation field of an electrical, magnetic [and/]or electromagnetic type [(15, 17);], wherein said excitation field [being] is produced by an excitation signal having [particularly] a frequency between about 20 Hz and about 20 000 Hz; and

[- of] converting the fields resulting from the interaction of [the] said excitation field and [the] said substance[, into signals[, particularly electrical signals,] by means of a first transducer or acquisition sensor [(5)] receiving said resulting fields[,], wherein said resulting fields are the signals that are produced or acquired from said substance.

[(wherein said signals are characteristic of the biological [and/]or chemical activity or [of the biological and/or chemical] behavio[u]r of said substance or said active element contained in said substance)].

33. (Amended) A process according to claim 32, [the characteristic of] wherein said excitation signal [being that it] has a uniform spectral power, of the white noise type.

34. (Amended) A process according to [any one of] claim[s] 32, [such that:
- the] wherein said zone subjected to [the] said excitation field is isolated [(13)] from [the parasitic] fields coming from the environment.

35. (Amended) A process according to [any one of] claim[s] 32, further [including the stage:] comprising:

[- of] applying said signals coming from said first transducer [(5)], by means of a second transducer [(51)], to a biological receptor system,

[~~(C)~~wherein said signal is applied in such a way that the biological [and/]or chemical activity or [the biological and/or chemical] behavio[u]r of the biological receptor system will be modified in accordance with the nature of the biological [and/]or chemical activity or [the biological and/or chemical] behavio[u]r of said substance~~(C)~~].

42. (Amended) An [amplification] process [of] for amplifying a reaction between a ligand and a receptor [the two elements] of a ligand-receptor pair, [characterised in that it includes] comprising:

[-] bringing [into contact the] said ligand and said receptor [two elements] of [a] said ligand-receptor pair into contact in conditions suitable to allow their reaction[,]; and
[- previously, simultaneously or subsequently to this bringing into contact, the application to one and/or the other of these elements of] applying an electromagnetic signal, obtained from an electrical signal produced by a sensor placed in front of at least one [and/or the other] of [the] said ligand or said receptor [two elements] of the ligand-receptor pair[: said electromagnetic signal being hereinafter designated the electromagnetic signal characteristic of the biological activity of one and/or the other of the two elements of a ligand-receptor pair].

43. (Amended) [An amplification] The process according to claim 42, [characterised in that the] wherein said reaction between [the] said ligand and [the] said receptor is obtained by bringing at least two reagents, [into contact two reagents] containing respectively, [the] said ligand and [the] said receptor, into contact and[, to one and/or the other of these reagents, is applied an] applying an electromagnetic test signal suspected to include the electromagnetic signal characteristic of the biological activity of at least one [and/or the other of the two elements] of said ligand or said receptor of a ligand-receptor pair to at least one of said two reagents.

44. (Amended) [An amplification] The process according to claim 43, [characterised in that the application, to one and/or the other of the reagents, of the] wherein said application of said electromagnetic test signal is [made] accomplished by exposure of a solution or a suspension containing [one or other of these] said at least one reagent[s] to [this] said electromagnetic test signal.

45. (Amended) [An amplification] The process according to claim 43, [characterised in that the application, to one and/or the other of the reagents, of the] wherein said application of said electromagnetic test signal is [made] accomplished by dilution of a solution or a suspension [including one and/or the other of these] comprising at least one of said reagents, in a solvent [having been previously] already exposed to [this] said electromagnetic test signal.

46. (Amended) [An amplification] The process according to claim 43, [characterised in that the application, to one and/or the other of the reagents, of the] wherein said application of said electromagnetic test signal is [made] accomplished by dissolution or putting into suspension [of this reagent or these reagents] at least one of said reagents in a solvent [having been previously] already exposed to [this] said electromagnetic signal.

47. (Amended) [An amplification] The process according to claim 45, [characterised in that] wherein [the] said solvent [having been previously exposed to the electromagnetic test signal is] comprises water, [or] physiological solute, or a combination thereof.

48. (Amended) [An amplification] The process according to claim 43, [characterised in that the] wherein said electromagnetic test signal is the electromagnetic signal obtained from an electrical signal produced by a sensor placed in front of an analysis sample suspected to contain [the] said ligand [and/] or [the] said receptor.

49. (Amended) [An amplification] The process according to claim 43, [characterised in that the] wherein said electromagnetic test signal is the electromagnetic signal radiated by an electromagnetic radiation source.

50. (Amended) [An amplification] The process according to claim 42, [characterised in that the] wherein [reaction between the ligand and the receptor is made by bringing into contact] an analysis sample suspected to contain [the] said ligand [and/] or [the] said receptor[,] is brought into contact with a reagent containing either [the] said receptor, or [the]

said ligand, and[, to this sample and/or to this reagent, is applied the] said electromagnetic signal characteristic of the biological activity of [one and/or the other of the two elements of the ligand-receptor pair] at least one of said ligand or said receptor is applied to said sample reagent combination.

51. (Amended) [An amplification] The process according to claim 50, [characterised in that the application, to the analysis sample, of the] wherein said electromagnetic signal [characteristic of the biological activity of one and/or the other of the two elements of the ligand-receptor pair] is applied [made] by [exposure of this] exposing said sample to [this] said electromagnetic signal [or signals], or by dilution of [this] said sample in a solvent [having been previously] already exposed to said electromagnetic signal [or signals].

52. (Amended) [An amplification] The process according to claim 50, [characterised in that the application, to the reagent intended to react with the analysis sample, of the electromagnetic signal characteristic of the biological activity of one and/or the other of the two elements of the ligand-receptor pair is made] wherein said electromagnetic signal is applied by [exposure of] exposing a solution or a suspension containing [this] said reagent to [this] said electromagnetic signal [or signals], [or] by dilution of [such a] said solution or suspension in a solvent [having been previously] already exposed to [this] said electromagnetic signal or signals, or [again] by dissolution or putting into suspension of [this] said reagent in a solvent [having been previously] already exposed to said electromagnetic signal [or signals].

53. (Amended) [An amplification] The process according to claim 50, [characterised in that, to the analysis sample and to the reagent intended to react with it, is applied the electromagnetic signal characteristic of the biological activity of one and/or the other of the two elements of the ligand-receptor pair,] wherein said electromagnetic signal is applied by exposure of a solution or a suspension containing [this] said sample and [this] said reagent to [this] said electromagnetic signal [or signals], or by dilution of [such a] said solution or suspension in a solvent [having been previously] already exposed to said electromagnetic signal [or signals].

54. (Amended) [An amplification] The process according to claim 50,
[characterised in that, to the analysis sample and/or to the reagent intended to react with it, is
applied both] wherein both said electromagnetic signal characteristic of the biological activity of
the ligand and said electromagnetic signal characteristic of the biological activity of the receptor
are applied thereto.

55. (Amended) [An amplification] The process according to claim 51,
[characterised in that the] wherein said solvent [having been previously exposed to the
electromagnetic signal or signals] is [advantageously] water, [or] physiological solute, or
combinations thereof.

56. (Amended) [An amplification] The process according to claim 42,
[characterised in that it includes] further comprising [an acquisition stage of the] acquiring said
electromagnetic signal characteristic of the biological activity of [one and/or the other of the two
elements of the] said ligand or said receptor of said ligand-receptor pair.

57. (Amended) [An amplification] The process according to claim 56,
[characterised in that it includes a] wherein acquiring said electromagnetic signal comprises
recording and restitution [stage] of information, wherein said information is representative of
[the] said electromagnetic signal characteristic of the biological activity of one [and/or the other
of the] of said two elements of [the] said ligand-receptor pair.

58. (Amended) [An amplification] The process according to claim 42,
[characterised in that it includes a] further comprising detection, [and, possibly, a] measurement
[stage], or a combination thereof of the complexes resulting from the reaction between [the] said
ligand and [the] said receptor.

59. (Amended) [An amplification] The process according to claim 42,
[characterised in that the] wherein said ligand is an antigen or a hapten, [whereas the] and said
receptor is an antibody or a membranous receptor targeted specifically against [this] said ligand.

60. (Amended) [An amplification] The process according to claim 59,
[characterised in that the] wherein said reaction between [the antigen and the antibody or the
hapten and the antibody] said ligand and said receptor is revealed by agglutination.

61. (Amended) A process for detecting the presence of a substance corresponding
to [one of the two elements of] at least one of said ligand or said receptor of a ligand-receptor
pair in an analytical sample, [characterised in that it includes the implementation of] comprising
an amplification process according to claim 42.

69. (Amended) [Application of a process for detecting the presence of a substance
in an analytical sample according to claim 60 to] The process of claim 60, wherein said process
is used for biological diagnostics in human or veterinary medicine.

70. (Amended) [Application of a process for detecting the presence of a substance
in an analytical sample according to claim 61 to] The process of claim 61, wherein said process
is used in bacteriological control in the pharmaceutical industry, the cosmetics industry, or the
food production [and industries] industry.

71. (Amended) A process for detecting the presence of an electromagnetic signal
characteristic of the biological activity of a substance corresponding to a ligand or a receptor of a
ligand-receptor pair [,] in an electromagnetic test signal[, of the electromagnetic signal
characteristic of the biological activity of one and/or the other of the two elements of a ligand-
receptor pair; characterised in that it includes] comprising the implementation of an amplification
process according to claim 42.

72. (Amended) A detection process according to claim 71, [characterised in that
the] wherein said electromagnetic signal is the electromagnetic signal radiated by an
electromagnetic radiation source.